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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
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Address
by
James E. Webb, Administrator
National Aeronautics and Space Administration

WEST SIDE ASSOCIATION OF COMMERCE OF NEW YORK
Statler-Hilton Hotel
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Captain Rickenbacker, Mr. Troy, and members and guests of the West Side Association of Commerce of New York:

Thank you for your warm welcome and for your recognition, through this award, of the work of the National Aeronautics and Space Administration to build space power for the United States.

Pre-eminence in space for a great nation like the United States means a persistent, driving effort in science, in technology, and in finding ways to utilize this knowledge, this capability, for purposes which serve the Nation's need. It is the kind of capability to lead the world which we have shown in that tremendous area of advanced science and technology represented by atomic energy.

Since 1958 when President Eisenhower recommended and the Congress approved the establishment of the National Aeronautics and Space Administration, our efforts in space, as a Nation, have doubled every year. They doubled during each year of the Eisenhower Administration and have continued to double each year of

the Kennedy Administration. This means that as we have adapted rockets made for military purposes to the exploration of space we have gained the kind of scientific knowledge which has permitted our engineers to better understand the conditions under which rockets and spacecraft must operate in the space environment, and to build better boosters and better spacecraft. These better boosters and better spacecraft have in turn permitted tremendous advances in science and a whole new area of dynamic technological progress.

All of this has led us to the point where we can more accurately inventory the present than we have been able to do before and also more accurately predict the future.

Should the resources allocated to our national space effort continue to double every year? As the aerospace industry develops new capability in advanced fields and phases out its work on manned aircraft, should the space program be expanded to utilize these resources?

If we give the Atlas booster which carried astronauts Glenn, Carpenter and Schirra around the world an index number of one, the Advanced Saturn now under contract and being built by three of America's great aerospace companies, would have an index number of eighty-five -- it could lift eighty-five Mercury capsules. It can carry to the moon the Apollo spacecraft, inject this into orbit around the moon, and permit the lunar excursion vehicle to leave the mother craft, descend to the surface of the moon, spend two days there, return to join the mother craft, and then propel this craft back for a landing on the earth. This means the Advanced Saturn will have the capacity to send a payload of 90 thousand pounds on an escape trajectory from the earth.

Now the question is whether an even larger booster, the giant Nova, which will have at least twice this capacity, should be put under contract at this time. To do so will add in the years ahead, large financial requirements. Most scientists and experts in space believe this large booster will ultimately be required for the time period following our lunar exploration. But involved in the decision of when to undertake development of the Nova booster is the question of how fast nuclear power can be developed for rocket propulsion.

Involved also is the question of whether solid fuels may be developed at such a rapid rate as to offer advantages over liquid fuels for the first stage of such a booster as Nova.

The present program, even without Nova, is designed to achieve the pre-eminence we need in all phases of space science, space flight, space exploration and space utilization. It is expensive. Those of us charged with the management of it are devoting every capacity and every skill we have toward pushing it as a driving vigorous effort, but conducted in a prudent and efficient manner.

Except in war time, no large national effort has had such a rapid buildup as the space program over the past five years. The end of the buildup is not in sight, but the rate is slowing down and is keyed to the policy I have stated -- that this is a fast paced, driving, prudently managed and efficiently conducted program, but is not a crash program.

In his 1964 budget, the President will propose to Congress a level of operations to begin in July 1963 and extend 12 months thereafter. Congress will have six months to study these proposals, to debate them, and to reach decisions as to whether the elements of the program are in balance, serve the needs of the nation, and fit together to achieve the pre-eminence in space our national interest requires. But the President cannot make his recommendations, nor can Congress consider them in isolation from our other national needs and requirements.

In my view, we are entering a period when out national decision and the debates which accompany them will not so much relate to whether and when we can achieve pre-eminence in space, but the rate at which we should proceed beyond the time when this pre-eminence is achieved -- beyond the time when we have begun manned exploration of the moon.

In our space program we are building the power to go forward to meet any national need which our processes of decision bring forth and ratify.

No one could participate in the management of our program, and the decisions which are required to carry it out, without a keen awareness that there are those who believe the nation should proceed at an even faster pace, that every resource available through science, technology and industrial capacity should be utilized to the limit. There are those who believe we should begin major funding now of programs looking toward manned exploration of Mars and Venus and operations from the surface of the moon. To these, the decisions we have made to spend two more years in studies, research and technological developments related to the Nova booster do not reflect sufficient urgency and are not, therefore, in the national interest. In the debates which will accompany the decisions on the 1964 budget submissions of the President, I am sure Congress will hear these arguments and that the country will hear much pro and con on the related questions. All I can say tonight is, that our program is proceeding on schedule, that it is constantly undergoing a vigorous re-examination to determine how to use the resources provided to

achieve the President's goal of pre-eminence in space at the earliest feasible time and that there has been no slip in our target date. As rapid as our buildup has been in the funds provided, our technological progress and need for additional scientific data to support it has been even greater. There are hard decisions and difficult choices to be made every day and every week in the allocation of funds for most effective use.

In the National Aeronautics and Space Administration, I believe we have the technical and financial management to make these choices and to achieve the results for which this program was established. Unless some unforseen opportunity opens up, or new requirement is established, we will not ask the President to request supplemental or deficiency funds for the current fiscal year. The requirements for the program for the year 1964 have been carefully laid out for consideration by the Bureau of the Budget and the President, and we have no doubt that the President's budget recommendations to Congress will provide the same strong support which has characterized his actions in the past.

The liquid-fueled rocket engine was first proved to have capability of delivering its power in a vacuum, and hence out in space beyond the earth's atmosphere, by Dr. Robert Goddard, here in the United States. It was first utilized for military purposes by Germany during World War II. Its principles have now been developed directly on Atlas and Titan II, and for solid fuel applications on missiles like Polaris and Minuteman, which give us the base of defensive strength necessary in these times.

Every American should be proud of the tremendous accomplishments of our Armed Services and the aerospace industries, which are teamed up with them, for the missile power which they have built in an unprecedentedly short period and which is vital to our security today. But I believe it is just as important to recognize that the United States, in its consistently followed national policies and programs in space, has also developed the capability to offer the world peaceful benefits from the use of space, as well as strength for national defense.

Policies and programs stemming from the 1958 Act and the financial, scientific, and technical resources which have been applied to them over the intervening years, provide the foundation for pre-eminence -- a driving effort to make the scientific studies, do the exploration, develop the technology, and utilize all of this for the benefit of mankind. The proof that this effort is of great significance to the future of this Nation and of the Free World lies in the fact that more than fifty other nations are joined with us in one or more aspects of the program.

The old saying that everything that goes up has to come down has been changed by the rocket engine.

For our program in the space sciences we use more than a hundred sounding rockets a year to go outward from the earth, take measurements over short periods of time, and fall backward to the earth.

For measurements over longer periods of time, we use larger rockets to send out scientific satellites which orbit the earth, some in circular orbits, some in elliptical orbits, that reach outward several hundred thousand miles. These scientific satellites pass time and time again through the various regions of space surrounding the earth, taking continuous measurements and monitoring such phenomena as the trapped radiation in the Van Allen belts.

To explore the further reaches of space, we use deep space probes like the Mariner that is now on its way to Venus. These permit the taking of measurements far out from the earth and the correlation of these with measurements taken near the earth and on the surface of the earth. The ability to measure energy streaming from the sun out 20 million miles from the earth, then again just above the earth's atmosphere, and again as it reaches the surface of the earth, is expanding our knowledge in many areas useful here on earth.

From the experiments which Mariner is carrying on its trip to Venus we have already confirmed that the high-energy radiation in space is relatively constant with variations ranging only to three or four percent; that the cosmic dust flux in space is about a thousand times less than that found near the earth. This and other data will be used by the engineers in government and in industry to design better spacecraft to carry more complete measuring instruments. Thus the process of the scientific measurement and understanding of the space environment provides a basis for improved engineering design and construction in a process that feeds on itself and fosters vigorous advances in both science and engineering.

Ever larger spacecraft are required for manned exploration of space. Learning from the Mercury spacecraft which first circled the earth under automatic control and then again under automatic control carrying Enos the chimpanzee, and then under the control of man as John Glenn circled the earth, we now have building the two-man Gemini spacecraft. This will give us experience with the weightless condition in space and other factors for a week or more of operations. And beyond this, the three-man Apollo, will have a capability to orbit the earth for two weeks

or more and later will serve as the basic mother craft for manned landing and exploration of the moon.

Parallel with the use of sounding rockets, scientific satellites, deep space probes, and manned spacecraft goes the development of those specialized spacecraft which already are performing useful functions. The Tiros weather satellite has been launched successfully six times and has vastly expanded our understanding of the weather and of the amount of energy absorbed by the earth and re-radiated by the earth to space -- knowledge essential to improvements in our capability for understanding the weather and using it most effectively.

The communications satellite, Telstar, built by the American Telephone and Telegraph Company and launched by NASA, has proved the usefulness of satellite relay stations in space to vastly expand the ability of man to communicate by telephone, other types of messages, and by television. The world's international communications network bids fair to undergo a revolutionary period of progress as a result of our new knowledge about how to use satellites to make improvements.

All of us who are associated with the National Aeronautics and Space Administration deeply appreciate your recognition that this effort and our accomplishments are important. Twenty-six thousand men and women work under Civil Service in the programs of NASA. More than two hundred thousand are in the laboratories, factories, foundries, and fabricating plants of the various aerospace and electronics industrial organizations which perform most of the work under contract.

Of the twenty-six thousand who are direct Civil Service employees of NASA, some 8,500 are scientists and engineers. In industry there are another 43,000 of these highly qualified scientists and engineers. These constitute a vast government-industry network similar to that utilized by our Armed Services to build the equipment they need. And the cooperation which constantly goes on between the Department of Defense industrial team and the NASA industrial team, and the means through which the programs are coordinated is one of our major national assets.

Important features of the NASA program are that much of it is unclassified and in the area of basic scientific research. As a consequence, our nation's most eminent scientists are working in our universities with graduate students, doing essential research, and at the same time training additional scientists through our great national system for graduate education.

This basic resource of our nation is now being employed effectively through a process which permits the scientists to develop the instruments required to expand man's knowledge of the universe in his own discipline and then utilize the rocket power of NASA to take these experiments out into space and bring the data back. The data then goes back to the university and is analyzed by the scientist and utilized for further research and education.

Finally, any statement about the basis for pre-eminence in space -- pre-eminence in all phases in space -- which is now being laid by the United States would be incomplete without a mention of the giant engineering complexes here on earth required to build and utilize the large boosters which launch the spacecraft I have been discussing. Here again, the Corps of Engineers of the United States Army is a major element in the team building our national space strength.

Largely under the supervision of the Corps of Engineers are being built the very large test stands for the tremendous engines and for the very large clusters of these tremendous engines required for our biggest boosters. The launching complex at Cape Canaveral must include an ability to assemble the large boosters, placing one stage on top of the other until the rocket stands, in the case of the Advanced Saturn, almost as tall as the Waldorf Astoria Hotel.

The assembly buildings for the Advanced Saturns will include about the same cubic footage as the Empire State Building and the door to this assembly building will be 456 feet tall -- about equal to the height of a modern 46-story building.

In addition to these large ground-based engineering complexes is the worldwide tracking and data acquisition network which has been conceived and put together and which you have seen operate effectively on the Mercury flights. This network, one of our great national assets, involves the cooperation of many nations. In fact, in many of these stations the personnel are provided and paid by the host nation.

To every rule there must be an exception. I believe it was Emerson who stated that every human institution is the lengthened shadow of a man. In the National Aeronautics and Space Administration you see the lengthened shadow of many dedicated men and women -- scientists, engineers, builders, astronauts, and experts from every discipline in our most advanced areas of science and

technology. Dr. Hugh Dryden, who, unfortunately, was forced to cancel his plans to be here with us tonight, has proven through more than forty years that it is possible for a man to be a great scientist and a great administrator.

In 1948 the nation was fortunate in having Dr. Keith Glennan, President of the Case Institute of Technology, accept appointment as the first Administrator of NASA. This outstanding educator and administrator teamed up with Dr. Dryden to provide the top leadership for the first few years of NASA's growth. Continuing as Deputy Administrator during the period when President Kennedy has given us such strong backing and full endorsement, Dr. Dryden has provided a large element of wisdom, drive and foresight.

Associated with us are many men and women of great ability, some of whom you have seen here tonight, and we are all more than fortunate that the members of Congress, both in the Senate and in the House of Representatives, who deal with the space program have wisdom, foresight and courage.

The space program has never been partisan, and it is an interesting fact that on a roll call vote in the last Congress, the program was doubled without a dissenting vote in the House of Representatives. This came under the great leadership of Congressman George Miller of California, with Congressman Joe Martin of Massachusetts serving as the senior Republican on the Committee.

In the Senate, with Senator Kerr of Oklahoma as Chairman and with first Senator Bridges, then Senator Wiley, and now Senator Margaret Chase Smith as the senior Republican on the Committee, the program has had close scrutiny, continuous examination, and strong support.

It is the contribution of all of these forces, in industry, government and the universities, under the leadership which President Kennedy and Vice President Johnson have given the program, that gives us the basis for the pre-eminence we have in most fields in space and the pre-eminence we will shortly have in all.

Thank you very much.

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